What is claimed is:

1. A shallow-trench isolation transistor formed on a semiconductor substrate including:

an active region on the semiconductor substrate bounded by an isolation trench;

an isolation implant formed in the sidewalls of said isolation trench;

spaced apart source and drain regions formed in said active region;

a gate dielectric layer formed over said active region; and

a gate disposed over said gate dielectric layer and located between said source and drain regions.

2. The shallow-trench isolation transistor of claim 1 having n-type conductivity.

3. The shallow-trench isolation transistor of claim 2 wherein said isolation implant is a boron implant.

4. The shallow-trench isolation transistor of claim 3 wherein said boron implant has a concentration of about 2e12.

5. A method for fabricating a shallow-trench isolation transistor on a semiconductor substrate including:

forming an isolation trench to define an active region in the silicon substrate;

performing sidewall isolation impants on the side and bottom walls of said isolation trench;

depositing a dielectric isolation material in said isolation trench;

planarizing the top surface of said silicon substrate and said dielectric isolation material;

forming a gate oxide layer over said active region in said silicon substrate;

forming and defining gate regions over said gate oxide layer in said active region in said silicon substrate; and

forming source and drain regions in the active region in the silicon substrate.

6. The method of claim 5 wherein performing said sidewall implants comprises implanting n-type impurities.

7. The method of claim 6 wherein implanting n-type impurities comprises implanting boron.

8. The method of claim 6 wherein implanting n-type impurities comprises implanting boron to a concentration of about 2e12.

9. The method of claim 5 wherein performing said sidewall implants comprises performing said sidewall implants at an angle.

10. The method of claim 9 wherein performing said sidewall implants at an angle comprises performing said sidewall implants at an angle of about 25°.